

AMENDMENTS

In the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Canceled)
2. (Previously Presented) A positive-working photosensitive resin precursor composition according to Claim 17, wherein the photoacid generator is a quinone diazide compound.
3. (Canceled)
4. (Previously Presented) A positive-working photosensitive resin precursor composition according to Claim 17, wherein the absorbance of the polymer represented by general formula (1) at 365 nm is no more than 0.1 per 1 μm of film thickness.
- 5-8. (Canceled)
9. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim ~~[[17]]~~ 18, wherein, in the polymer represented by general formula (1), at least 50% of $\text{R}^1(\text{COOR}^3)_m(\text{OH})_p$ are groups represented by general formula (6), and the group represented by R^2 is a divalent diamine compound residual group which does not contain a hydroxyl group.
10. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim ~~[[17]]~~ 19, wherein, in general formula (1), at least 50% of $\text{R}^2(\text{OH})_q$ is a group represented by general formula (7), and the group represented by R^1 is a tetracarboxylic acid residual group.
11. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim ~~[[17]]~~ 20, wherein, in general formula (1), at least 50% of $\text{R}^2(\text{OH})_q$ is a group represented by general formula (8), and the group represented by R^1 is a tetracarboxylic acid residual group.

12. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim [[17]] 21, wherein, in general formula (1), at least 50% of $R^2(OH)_q$ is a group represented by general formula (9), and the group represented by R^1 is a tetracarboxylic acid residual group.

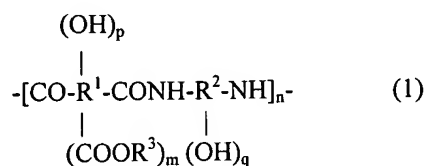
13. (Canceled)

14. (Previously Presented) A method of producing a positive-working photosensitive resin precursor composition according to Claim 22, wherein the compound represented by general formula (3) is an N,N-dimethylformamide dialkyl acetal.

15. (Previously Presented) A method of producing a positive-working photosensitive resin precursor composition according to Claim 22, wherein the compound represented by general formula (5) is cyclohexyl vinyl ether.

16. (Previously Presented) A semiconductor passivation layer, a semiconductor device protective film or an interlayer dielectric for multilayer interconnects for high density mounting comprising a heat-resistant resin coating formed of the photosensitive resin composition of claim 17.

17. (Previously Presented) A positive-working photosensitive resin precursor composition containing (a) a polymer in which structural units of the kind denoted by general formula (1) below are the chief component and (b) a photoacid generator, and the total carboxyl groups contained in said polymer is from 0.02 to 2.0 mmol/g:



wherein one of the following conditions (A) and (B) is satisfied:

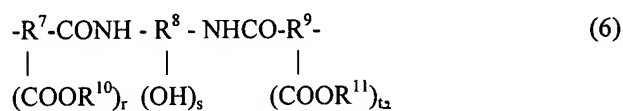
(A) a residual chlorine ion concentration is 30 ppm or less, or

(B) a residual quantity of sodium, potassium and iron ions is 10 ppm or less,

wherein R^1 is an organic group of valency from 3 to 8 having at least 2 carbon atoms, R^2 is an organic group of valency from 2 to 6 having at least 2 carbon atoms, R^3 is hydrogen or a monovalent organic group with from 1 to 10 carbons but it is not all hydrogen nor is it all a monovalent organic group with from 1 to 10 carbons. n is an integer of value from 3 to 100,000, m is 1 or 2, p and q are integers of value from 0 to 4 $p + q > 0$, and

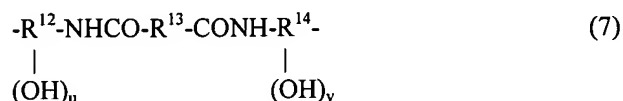
wherein some of the carboxyl groups of the polymer represented by general formula (1) are imidized by reaction with an adjacent amide group, and the percentage such imidization is from 1% to 50% of said carboxyl groups of the polymer represented by general formula (1).

18. (Currently Amended) A positive-working photosensitive resin precursor composition according to Claim 17, wherein $R^1(COOR^3)_m(OH)_p$ in general formula (1) is represented by the following general formula (6):



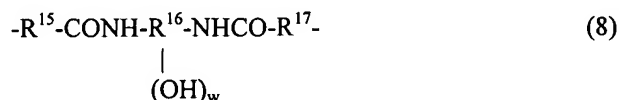
R^7 and R^9 represent C_2 to C_{20} organic groups of valency 3 or 4, R^8 represents a hydroxyl group-containing C_3 to C_{20} organic group of valency from 3 to 6, and R^{10} and R^{11} each represent hydrogen or a C_1 to C_{10} monovalent organic group, are not all hydrogen atoms, and are not all C_1 to C_{10} monovalent organic group, r and t are 1 or 2, and s denotes an integer of a value from 1 to 4.

19. (Previously Presented) A positive-working photosensitive resin precursor composition according to Claim 17, wherein $R^2(OH)_q$ in general formula (1) is represented by the following general formula (7):



wherein R¹² and R¹⁴ represent hydroxyl group-containing C₂ to C₂₀ organic groups of valency 3 or 4, and R¹³ represents a C₂ to C₃₀ divalent organic group, and u and v represent the integer 1 or 2.

20. (Previously Presented) A positive-working photosensitive resin precursor composition according to Claim 17, wherein R² (OH)_q in general formula (1) is represented by the following general formula (8):



wherein R¹⁵ and R¹⁷ represent C₂ to C₃₀ divalent organic groups, and R¹⁶ represents a hydroxyl group-containing a C₂ to C₂₀ organic group of valency from 3 to 6, and w represents an integer in the range from 1 to 4.

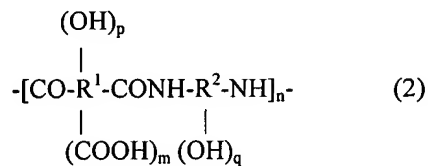
21. (Previously Presented) A positive-working photosensitive resin precursor composition according to Claim 17, wherein R² (OH)_q in general formula (1) is represented by general formula (9):



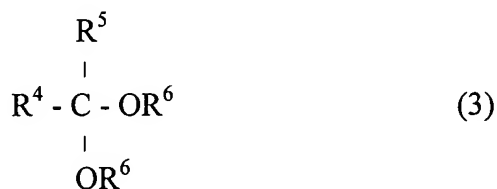
wherein R¹⁸ represents a C₂ to C₃₀ divalent organic group, and R¹⁹ represents a hydroxyl group-containing a C₂ to C₂₀ organic group of valency from 3 to 6, and x represents an integer in the range from 1 to 4.

22. (Previously Presented) A method of producing a positive-working photosensitive resin precursor composition according to Claim 17, comprising treating a polymer in which structural units represented by general formula (2) below are the chief component with at least

one type of compound represented by general formulae (3), (4) or (5) below to produce the compound represented by general formula (2):



wherein R¹ is an organic group of valency from 3 to 8 having at least 2 carbon atoms, and R² is an organic group of valency from 2 to 6 having at least 2 carbon atoms, n is an integer of value from 3 to 100,000, m is 1 or 2, p and q are integers of value from 0 to 4 and p + q > 0,



wherein R⁴ and R⁵ represent a hydrogen atom or a monovalent organic group, nitrogen-containing organic group or oxygen-containing organic group with at least one carbon atom, R⁶ represents a monovalent organic group with at least one carbon, and R⁷ represents a divalent organic group, nitrogen-containing group or oxygen-containing organic group with at least one carbon atom.